U.S.S.N.:

10/809,959

Filing Date: March 26, 2004

EMC Docket No.: EMC-02-119CIP3

In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the

Application.

**Listing of Claims:** 

1. (Original) A method for consistent error presentation within a system of one or more

storage area networks including an intelligent multi-protocol switch (IMPS) combined with a

storage and switch controller including at least one microprocessor and a disk array for storing

meta-data related to the plurality of data storage volumes such that the one or more data storage

networks are managed by the controller using the meta-data and by interacting with the IMPS

wherein the method comprises the steps of:

in response to receiving an error from a data storage system in one of the storage area

networks, the controller processing the error by selectively either masking the error from the host

or presenting the error to the host as being from the controller rather than the data storage

system.

2. The method of claim 1, wherein any error is presented using a delivery (Original)

algorithm that allows a storage software application on the controller to mask errors from other

higher storage software applications on the controller.

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3. The method of claim 2, wherein the storage software application receiving (Original)

an error is given an initial context of the I/O request along with the error allowing them to only

incur additional overhead when exceptional conditions arise.

4. (Original) The method of claim 2, where the application presents errors to the host that

make the volume affected with the error appear as a single logical device to the hosts that issued

the I/O request.

5. (Original) The method of claim 3, where the application presents errors to the host that

make the volume affected with the error appear as a single logical device to the hosts that issued

the I/O request.

6. (Original) The method of claim 1, wherein at least one storage software application is

given an initial context of the I/O request along with the error allowing them to only incur

additional overhead when exceptional conditions arise.

7. The method of claim 6, where the storage application presents errors to the

host that make the volume affected with the error appear as a single logical device to the hosts

that issued the I/O request.

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8. (Original) The method of claim 7, where the storage application presents errors to the

host that make the volume affected with the error appear as a single logical device to the hosts

that issued the I/O request.

9. (Original) A system for consistent error presentation within a one or more storage area

networks, the system comprising an intelligent multi-protocol switch (IMPS) combined with a

storage and switch controller including at least one microprocessor and a disk array for storing

meta-data related to the plurality of data storage volumes such that the one or more data storage

networks are managed by the controller using the meta-data and by interacting with the IMPS

wherein the system includes computer-executable logic for executing the steps of:

in response to receiving an error from a data storage system in one of the storage area

networks, the controller processing the error by selectively either masking the error from the host

or presenting the error to the host as being from the controller rather than the data storage

system.

10. (Original) The system of claim 9, wherein any error is presented using a delivery

algorithm that allows a storage software application on the controller to mask errors from other

higher storage software applications on the controller.

11. (Original) The system of claim 10, wherein the storage software application receiving

an error is given an initial context of the I/O request along with the error allowing them to only

incur additional overhead when exceptional conditions arise.

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12. (Original) The system of claim 10, where the application presents errors to the host that

make the volume affected with the error appear as a single logical device to the hosts that issued

the I/O request.

13. (Original) The system of claim 11, where the application presents errors to the host that

make the volume affected with the error appear as a single logical device to the hosts that issued

the I/O request.

14. (Original) The system of claim 9, wherein at least one storage software application is

given an initial context of the I/O request along with the error allowing them to only incur

additional overhead when exceptional conditions arise.

15. (Original) The system of claim 14, where the storage application presents errors to the

host that make the volume affected with the error appear as a single logical device to the hosts

that issued the I/O request.

16. (Original) The system of claim 15, where the storage application presents errors to the

host that make the volume affected with the error appear as a single logical device to the hosts

that issued the I/O request.

17. Canceled.

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